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ABSTRACT

The Rural Special Education Project is a federally funded partnership between Kayenta Unified School District and Northern Arizona University's (NAU) Center for Excellence in Education that aims to prepare well qualified special education teachers to work in rural and reservation schools. The participants are Native American residents working towards certification in special education and NAU students who move to Kayenta for two semesters. Two interactive instructional television (IITV) courses are typically given during the two-semester program. The courses are delivered over a network that links NAU with 10 community colleges and 5 rural school districts in Arizona. Operating on microwave technology, the IITV system is fully interactive and includes two-way video and audio, open microphones, and an on-site operator. Each student has a microphone, and a fax machine is used to send materials between sites. A survey of students indicated that advantages of the IITV courses were video back-up, quality education in a rural area, small informal classes, ability to live and work in their home community while earning college credits, ability to see the professor during class, and ability to fax out and receive information during class. Disadvantages were lack of resources available for classwork, impersonality of classes, inability to interact directly with the professors, expectations not always clearly defined, less guidance for students than in an on-campus class, and information not always received at appropriate time from campus. (TD)

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Interactive Instructional Television Education for Rural Areas

Introduction

The delivery of teacher preparation programs to rural and remote areas of our nation is a difficult task. However, it is also a very important one. Many special educators have suggested that students prepared within the contexts of rural and remote locations are more likely to teach in those areas and deliver high quality services to the children and families residing there (Helge and Marrs, 1981; Guerin and Roberts, 1987). There is some evidence to support this assertion (Lancaster, 1992). A wide variety of models have been employed to deliver teacher preparation programs to remote locations including the use of itinerant professors (Modell, 1988), school-based programs relying on a faculty member in-residence approach (Prater, Minner, and Miller, in press), and the use of distance education technologies (Guerin and Roberts, 1987). One technological advancement recently being used in many rural areas is interactive instructional television (IITV). Using a variety of technologies, IITV allows professors to powerfully instruct students at remote locations. Professors see their students in real-time. Students see and hear their professors. Picture and sound quality can be superb. Interactive Instructional Television is currently being used across the nation to deliver university courses to many rural areas. This innovative way of telecommunications is becoming a popular and accepted form of education for individuals living in remote communities who would otherwise need to travel long distances to receive a high-quality post-secondary education (Lewis, 1995).

In this paper we have described one effort to deliver a special education teacher training program to a very rural area. The students served in this project were students enrolled in the Rural Special Education Project, a federally funded project designed to prepare teachers to serve

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ethnic minority students and families, especially Native American students and families, residing in rural and remote areas of Arizona.

The Context Of Our Project

The Rural Special Education Project (RSEP) began in the fall of 1992. It is a federally funded partnership between Kayenta Unified School District (KUSD) and NAU's Center for Excellence in Education (CEE). A major goal of this project is to prepare well qualified special education teachers to work in rural and reservation schools (Prater, 1995). The participants in this project include Native American residents who are able to remain in their community while working towards certification in special education and NAU students (sometimes referred to as the "campus students") from the home-campus who move to Kayenta for two semesters. These individuals come together to form a cohort of students. The "campus-students" reside in apartments owned by KUSD. These apartments are donated to the project at no cost. Native American students reside in their own homes in or near Kayenta. Campus students work in KUSD classrooms each day for about four hours. They are supervised by Mentor Teachers and a variety of CEE faculty. Native American participants typically work as paraprofessionals each morning. Most are also employed in the Kayenta schools, but some work at other locations near the Kayenta community. All students enroll in eighteen hours of NAU classes which are completed in the afternoons. Classes are taught by an on-site resident faculty member, a faculty-liaison who drives to Kayenta once a week, and a variety of other faculty members who deliver instruction either in-person by driving to Kayenta or by way of an interactive microwave instructional television system.

The RSEP participants typically receive two IITV courses during their two semester program. These classes are taught by on-campus professors from the CEE at NAU. Northern Arizona University uses a distance-learning network called the NAUNet to provide educational services to ten community colleges and five rural school districts in Arizona. The NAUNet is a two-way interactive video using microwave technology and can communicate with up to nine sites simultaneously. There are approximately 4,000 students being served in upper-division, undergraduate, and graduate classes through interactive television at NAU. The funding for these systems was made available from major grants awarded by NTIA/PTEP, an agency in the United States Department of Commerce (Groenhout, 1995).

Overview Of An IITV Course In RSEP

The IITV classroom in Kayenta became operational in January, 1995. The IITV system operates on microwave technology, using full interaction which includes two-way video; two-way audio; open microphones; and an on-site operator (Bensusan, 1995).

The IITV classes are approximately three hours in length, one night per week at Monument Valley High School. The students each have a microphone and are encouraged by the NAU professor to get involved in discussions during the lecture. The professor can use the fax machine to send out hand-outs for the class. When the IITV operator receives this information she immediately makes a copy for each member of the class. When a student needs to get in touch with the professor, the IITV operator allows them to use the direct campus phone, or fax machine in the control room.

Surveys And Interviews

An informal survey to assess student perceptions of the advantages and disadvantages of receiving instruction through IITV was administered in the spring term, 1996. Respondents included all RSEP students enrolled in the program during the 1995-1996 academic year. The survey consisted of the following three questions:

1. List some of the advantages of attending an IITV course.
2. List some of the disadvantages and possible solutions to these disadvantages.
3. Have you had any classes on campus? If yes, how does IITV class instruction compare to on-campus instruction?

Students were also interviewed using an open-ended interview protocol. This was done to obtain thicker descriptions of the students' experiences with the IITV format.

Results

The results from the survey appear below. Advantages and disadvantages of the IITV format for respondents appear in rank order (i.e., the first advantage was mentioned most frequently).

The advantages for IITV included the following:

1. Video back-up
3. High quality education in a rural area
4. The classes are smaller and informal
5. Residents are able to remain working and living in their communities while earning college credits
6. The students can see the instructor while communicating long distance
7. Being able to fax out and receive information during class

The disadvantages for IITV included the following:

1. Lack of resources available in the rural areas for class work.
2. The students are unable to interact directly with the professors
3. Expectations are not always clearly defined--when assignments are due; how we are being evaluated.
4. Information is not always received when it is supposed to from campus.

The last question asked the students to compare an IITV course to an on-campus course. The following responses were given. These are not in any particular order.

- IITV is less personal due to the distance.
- The teacher has less control of the class.
- The on-campus class is more challenging.
- Expectations are greater in on-campus courses.
- "Students receive less guidance in long distance relationship (creating) a tendency for confusion, communication problems under time constraints."
- The classes tend to be smaller--fewer students.

Results from the interviews revealed that one of the positive aspects of IITV was having video back-up from the IITV operator (all classes are videotaped and kept on file for at least one week.) This was considered ideal for students who missed a class, or feel they needed to review the video for a better understanding of the lecture. Professors must give permission to the operator before allowing them to lend out a tape. The RSEP students were encouraged to watch the tape if they missed a lecture or question the professor's point of view. Native American students expressed the advantages of attending university classes via IITV while remaining in their rural community. IITV classes enabled them to work and interact within their community, as well as remaining within their cultural environment. Another advantage of IITV expressed by some respondents was that it enabled them to both view and communicate directly with an NAU campus professor---something they would have been otherwise unable to do. Most of the students indicated the long distance between their homes and the campus created a major disadvantage for them in terms of access to resources. In Kayenta, there are no bookstores or libraries. This was mentioned as a significant problem for projects or exams that required information from sources other than textbooks.

The impersonal aspect of IITV courses was also mentioned by several students. The students receiving the IITV instruction were not able to go to a professor's office, or speak personally with her for extra help or understanding. A "communication gap" existed, according to some students, between them and some teachers. For instance, one student stated that

expectations were not always clearly defined for assignments and exams and it was sometimes difficult to connect with some professor by phone or fax.

Survey results indicated some of the positive and negative impacts IITV makes in the students' education. Overall, students were unaccustomed to a class being taught over television, though most of the students both accepted and appreciated the convenience IITV delivery afforded them.

Implications/ Conclusions

Interactive Instructional Television technology is changing education across our nation. The need for special educators is increasing, making long distance education more essential to rural areas than ever before. The technology of IITV is being implemented into programs like the RSEP to fulfill these needs. There are clearly some advantages and disadvantages related to IITV delivery and those planning on initiating an IITV program of teacher preparation should attend to the suggestions and comments made by students experienced with IITV.

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